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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 14601-2025

Replacing GB/T 14601-2009

Electronic specialty gas - Ammonia

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1.Structure and drafting rules for standardization documents" Drafting. This document replaces GB/T 14601-2009 "Gas Ammonia for Electronic Industry". Compared with GB/T 14601-2009, in addition to the structural adjustment In addition to editorial changes, the main technical changes are as follows:

--- Changed the technical requirements that ammonia should comply with (see Chapter 4, Chapter 3 of the.2009 edition);

--- Added a chapter on "Sampling" (see Chapter 5);

--- Changed the purity calculation method (see 6.1,

4.2 of the.2009 edition);

--- Changed the determination method of hydrogen, oxygen, argon, nitrogen, carbon monoxide, carbon dioxide, methane and other hydrocarbon contents (see 6.2,

4.4 of the.2009 edition);

--- Changed the method for determining moisture content (see 6.3,

4.5 of the.2009 edition);

--- Changed the determination method of metal elements and other elements (see 6.4,

4.6 of the.2009 edition);

--- Added a chapter on "Inspection Rules" (see Chapter 7);

--- Changed the requirements for marking, packaging, transportation, storage and safety information (see Chapter 8, Chapter 5 of the.2009 edition). Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed

and coordinated by the National Technical Committee for Semiconductor Equipment and Materials Standardization (SAC/TC203). This document was drafted by: Suzhou Jinhong Gas Co., Ltd., Zhonghao Guangming Chemical Research and Design Institute Co., Ltd., Dalian Free Trade Zone Science and Technology Co., Ltd. Lide Chemical Technology Development Co., Ltd., Zhejiang Jianye Chemical Co., Ltd., Fujian Jiuce Gas Co., Ltd., Haining Yingde Sai Electronics Co., Ltd., CSIC (Handan) Perri Special Gas Co., Ltd., Guangdong Walter Gas Co., Ltd., Jiangxi Walter Electronics Xuepin Co., Ltd., Huizhou Huadatong Gas Manufacturing Co., Ltd., Hubei Heyuan Gas Co., Ltd., Haohua Gas Co., Ltd. Southwest Branch, Zhejiang Institute of Standardization, Suzhou Ivite New Materials Co., Ltd., Shanghai Shennan Special Gas Co., Ltd., Shanghai Huaai Chromatography Analysis Technology Co., Ltd., Dalian Data Gas Co., Ltd., Shanghai Fanwei Instrument Equipment Co., Ltd., Lianxiong Investment (Shanghai) Co., Ltd. Shanghai Feize Technology Co., Ltd., Shanghai Institute of Metrology and Testing Technology, Shenyang Zhongfu Kejin Pressure Vessel Co., Ltd., Zhejiang Dongkai Semiconductor Co., Ltd. Conductor Technology Co., Ltd., Heli Gas (Shanghai) Co., Ltd., Kunming Guangruida Special Gas Co., Ltd., Southwest Chemical Research and Design Institute Co., Ltd., Southwest Research and Design Institute of Chemical Industry Co., Ltd. Wuhan Branch, and Southwest Research and Design Institute of Chemical Industry Co., Ltd. Shuangliu Branch. The main drafters of this document are. Wang Xinxi, Sun Meng, Sun Funan, Shi Yini, Zhao Jian, Cao Suying, He Jingyu, Zhong Jiusheng, Zhao Suben, Wan Juanxiu, Zhu Ming, Ding Gaosong, Xu Junzhou, Ji Yanzhi, Hu Shuai, Fu Zhuhong, Chen Yanshan, Wu Jie, Wang Bailin, Liu Feng, Zhou Boxiao, Du Pengju, Qiu Yahui, Chen Jie, Wu Liang, Fang Hua, Gao Tiandong, He Bo, Yang Kang, Huang Hui, Shi Weifeng, Jiang Yang, Li Chunhua, Gong Bing, Wang Dawei, Yi Dawen, Li Yang, Liang Yongqiang, Liang Chengke, Gao Jing, Tang Xiamei, Chen Chunyu, Zhao Gang, Zhou Pengyun, Huang Jin, and Wang Chao. The previous versions of this document and the documents it replaces are as follows:

1 Scope

GB/T 14601-2025 is the Chinese national standard on electronic specialty gas - ammonia, in the field of chemical technology. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 28 March 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 October 2025. Classification: ICS 71.100.20, CCS G86. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the technical requirements, sampling, test methods, inspection rules, marking, packaging, transportation, storage and safety information for electronic

grade ammonia. This document applies to electronic grade ammonia prepared by purification of industrial liquid ammonia.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB 190 Dangerous Goods Packaging Marking

GB/T 3723 General safety rules for sampling of industrial chemical products

GB/T 5099 (all parts) Seamless steel gas cylinders

GB/T 5100 Steel welded gas cylinders

GB/T 5832.3 Determination of trace moisture in gases Part

3 Cavity ring-down spectroscopy

GB/T 7144 Color marking of gas cylinders

GB/T 14193 Regulations for filling liquefied gas cylinders

GB 15258 Provisions for the preparation of chemical safety labels

GB/T 16804 Gas Cylinder Warning Label

GB/T 28726 Gas analysis - Helium ionization gas chromatography

GB/T 33145 Large volume seamless steel gas cylinders

GB/T 34972 Determination of metal content in gases for use in the electronics industry - Inductively coupled plasma mass spectrometry TSGR0005 Safety Technical Supervision Regulations for Mobile Pressure Vessels TSG

23 Gas Cylinder Safety Technical Regulations

4 Technical requirements

The technical requirements of ammonia shall comply with the provisions of Table

1.Ammonia with a purity (volume fraction) of 99.99999% shall also be added with metal elements and other elements. The requirements for metal elements and other elements shall comply with the requirements in Table 2.